Product Release Information

LENOVOEMC™ PX12-450R

Network Storage Array, Server Class

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DESCRIPTION- The LenovoEMC™ px12-450r Network Storage Array is a powerful network storage solution offering the highest levels of performance and advanced data protection for small- to medium-sized businesses and the distributed enterprise. Powered by LenovoEMC™ storage technology, the px12-450r is ideal for production data stores, server virtualization, backup-to-disk target and video surveillance. The px12-450r is available in diskless, partially populated or fully populated configurations from 0TB to 48TB in a single array. The px12-450r provides the superior performance and reliability that you need for your mission critical data, and with built-in McAfee® VirusScan® Enterprise, your data is safe from viruses and other malicious threats. The px12-450r includes many enterprise-class features, such as Integrated Virtualization Extensions (IVX), Snapshot backup, the EMC Atmos Cloud Connector, EMC Avamar data deduplication as well as device-to-device data replication to ensure data integrity at both the source and the replication target. Businesses will appreciate extremely high throughput with quad-Gigabit Ethernet connectivity and an Intel® *Quad-Core* Xeon® Processor plus link aggregation (port bonding), Server Class hard drives, and the option of solid state drives.

TOP 5 FEATURES

1. Up to 375 users
2. Top Performance Intel® Xeon and Server Class Hard Drives
3. Integrated Virtualization Technology
4. Active Snapshot backup (.VSS & .VDS)
5. Active Directory High-Availability (ADHA) & hybrid authentication
6. SSD caching for faster read & write
7. iSCSI LUN security for improved authentication & connection
8. Video Surveillance (VGA port out, Milestone Arcus and Mindtree SecureMind)
9. Built-in McAfee VirusScan Enterprise

COMPLETE FEATURES

High-Performance: Built around the Intel® Xeon processor to support demanding workloads like virtualization, deduplication, database management and video surveillance.

- Intel Quad-Core 2.5GHz E3-1265Lv2 Xeon Processor for enhanced performance and energy efficiency
- 8GB DDR3 RAM
- Server Class Hard Drives with support for SSD drives
- Quad GbE NICs
- Support for 1x 10GbE through optional dual-port 10GbE PCI card (sold separately)
- Certified for Windows®, VMware® and Citrix®

Capacity: Starting at 0TB (diskless), with a maximum capacity of 48TB (12 x 4TB SATA HDDs)

- Server Class hard drives ensure higher reliability and performance. These drives are designed to better handle rotational vibration and continuous operation for mission critical applications.
- 4-drive disk packs enable expansion to 8- or 12-drive configurations
- 4-drive configurations are preconfigured RAID 5
- Fully-populated 12-drive configurations are preconfigured RAID 5

Scheduled Availability: June 2013

Expandability: Add storage capacity by simply adding drives in the unpopulated drive bays. Added drives can be brought into an existing Storage Pool or made into a new Storage Pool. Additionally, USB connected Hard Disk Drives can be attached and used as shares. The px12 supports read and write on Fat32, NTFS, or ext2/ext3/ext4 formatted hard disks; read only of external HFS+ formatted drives.

RAID Support: RAID 1, 10, 5, 6, hot spare; automatic RAID rebuild and hot swap. RAID 0 and JBOD mode also available.

Integrated Virtualization Extensions (IVX): Run multiple virtual machines (VMs) on a LenovoEMC device. Allows Windows apps & Linux storage to run simultaneously. Ideal for database read-write, print server, Exchange server backup.

Snapshots: Point-In-Time backup of a complete volume image including Active Snap capability. Also uses .VSS and .VDS for compatibility with Windows & VMware hosts.

SSD Support: For I/O intensive applications, the px12-450r can be fitted with solid state drives to boost performance. **SSD Cache Pools** - Set up dedicated SSDs for fast reads & writes of frequently accessed data, providing improved performance for I/O intensive applications such as databases. SSD drives sold separately.

Redundant Power Supply: Ships with dual hot swappable power supplies for 1+1 redundancy

Storage Pools: Storage Pools group drives of like size and RAID protection together to simplify management. Optimize block storage performance with dedicated iSCSI storage pools.

Network File Protocols Supported: CIFS/SMB/Rally (Microsoft), NFS (Linux/UNIX), AFP/Bonjour (Apple), FTP, SFTP, TFTP, HTTP, HTTPS, WebDAV, Windows DFS, SNMP.

iSCSI Target provides block-level access for the most efficient storage utilization, especially for backup, database and email application performance. It can be used in parallel with file-level storage access via CIFS/NFS. Includes support for SCSI-3 persistent reservations.

Flexible Configurations

- Storage pools with RAID expansion, migration and hot spares
- Advanced RAID levels including Hot Spare

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Business-class Features: Windows Active Directory including Integrated Virtualization Extension (IVX), Active Directory Hybrid Authentication (ADHA), Trusted Domains, Microsoft Cluster Server and Hyper-V Live Migration support.

Advanced Networking Capabilities:

- NIC bonding for failover and load balancing including 802.3ad link aggregation.
- Jumbo frame support for 4000 and 9000 byte payloads.
- VLAN Tagging capability to IEEE 802.1Q standard.
- iSCSI persistent reservations for clustered Microsoft environments.

Data Replication / Device to Device Data Copy Jobs:

- Easily copy files to and from attached USB drives or any network share – including LenovoEMC™ Personal Cloud locations – using the secure rsync or CIFS protocol.
- Define your Copy Job to copy/synchronize files to and from connected drives and/or any other shared storage on your network.
- Schedule jobs to run on a predetermined schedule.

Application Manager: Third party applications can be installed using the embedded application manager.

Data Organization and Access: Windows DFS organizes folders and files on a network, such that they appear to be all in one directory tree on a single Lenovo storage system, even if the folders reside on many devices in many different locations. WebDAV (Web-based Distributed Authoring and Versioning) enables viewing, adding, or deleting files on a Lenovo storage device from the web, via HTTP or HTTPS for added security.

Power Savings:

- Automatic hard drive spin-down assure the most efficient (minimal) power consumption.
- **Scheduled Power:** Automatically power on or turn off your Lenovo device at a pre-selected time schedule.
- **Wake-On-LAN:** Powers on your Lenovo device when a "magic-packet" wake-up signal is sent over the network.(Wake-On-LAN magic packet application not included)

Uninterruptible Power Supply (UPS) Support: Allows to receive unattended shutdown requests from UPS through USB port to prevent data loss in case of power failure

Simple Management:

- Simple set up with an intuitive web-based interface. Web interface can be accessed locally or remotely.
- Feature Selection gives admin ability to customize the viewable features.

Configuration Backup and Restore: allows you to back up and restore system configuration information. Backing up a configuration saves various system properties, including users, groups, device identification, and Share names and permissions.

System Status: Consolidated resource on space utilization, device information, and status. In addition, you can manage controls such as device restart from here.

SMART Hard Drive Monitor: Continually monitors and reports on the health of all drives in the LenovoEMC storage system.

Built-in McAfee VirusScan Enterprise: LenovoEMC px Network Storage Family now includes virus scanning natively in the storage device. McAfee® VirusScan® Enterprise with px12-450r gives small businesses the ability to safely deploy network storage in places where previously there was the possibility of virus and/or malware vulnerability. McAfee VirusScan Enterprise for Linux permits on-access scanning of local file systems, mounted NFS and Samba/CIFS shares as well as a kernel-level scan cache to enhance performance. In addition, a secure browser interface with authentication and HTTPS (SSL) support is included to aid in administration. This delivers robust reporting features, including the ability to query the database by date range or individual field values, such as by virus name. Results of query can be exported to a CSV file and a diagnostic report can be generated for reporting a problem with the product.

LenovoEMC™ Personal Cloud: LenovoEMC Personal Cloud is a web-based computing architecture that connects your LenovoEMC Network Storage Array devices to other individuals and/or devices via the Internet.

LenovoEMC™ Link iOS & Android application: LenovoEMC Link gives you a direct link to your px12-450r via your iOS or Android device. You have the ability to upload, download, browse and copy content on your network storage devices using LenovoEMC Link mobile app. (download app from iTunes or Google Play)

Software Compatibility: Compatible with today's most common backup software, web browsers, media devices and computers.

SOLUTIONS

Virtualization: Lenovo network storage devices are certified for Citrix® XenServer™ 5.6, Windows® Server 2008 R2, Windows Server 2012, and VMware® vSphere ESX 5.1 which makes them the most cost-effective solution for server virtualization.

Video Surveillance

Protecting your home or business has never been easier than with LenovoEMC storage's built-in Video Surveillance Management software

- Your choice of marketing leading Milestone Arcus supporting 48+ cameras* (2 Milestone Arcus demo licenses **included**)
- or Mindtree SecureMind video surveillance software supporting up to 48 cameras (1 free Mindtree license **included**)
- Record, store and manage surveillance video in 1280x720 HD resolution
- Support for hundreds of popular IP cameras
- Leverage analog camera infrastructure via optional 16 channel video encoder card (Milestone only)
- Hassle-free installation and setup with automatic camera detection and recording configuration (Milestone only)
- Minimum configuration requires 1 disk installed
- Automatic email alerts, reporting and secure access through username/password
- **Axis Video Hosting Solution** (AVHS) for local to hosted cloud video storage and management.

** The maximum number of cameras supported could be higher or lower depending on camera resolution and recording settings*

Powerful Backup Functionality

- **Symantec Backup:** Lenovo network storage products are identified as compatible disk targets for Backup Exec software.
- **LenovoEMC Personal Cloud Backup:** Synchronize data between personal cloud member systems and the px12-450r.
- **Public Cloud Backup:** Use one of the integrated 3rd party cloud-based storage services such as Amazon S3 or Mozy™ to replicate data from your px12-450r to your public cloud account.
- **Active Snapshot** (VSS & .VDS provider)
- **Cloud Disaster Recovery:** Utilize two px12-450r **devices in different loc**ations and the LenovoEMC

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Personal Cloud function to create your own disaster recovery scheme.

- **EMC Atmos Cloud Connector:** The Atmos Connector software lets a user backup and share data using Lenovo devices as the source and Atmos cloud technology as the target. Enabled by LenovoEMC's integrated copyjob utility, customers can set up cloud folders and configure jobs to automatically copy data to any Atmos cloud.
- **Deduplicating Backup with EMC Avamar –** With Avamar support on the px12-450r, users have the industry's first storage product that natively supports EMC's industry-leading Avamar sub-file deduplication for remote office/branch office (RoBo) backup.
- **PC Backup with True Image Lite 2013 by Acronis –** powerful backup software from Acronis protects content, recovers data in case of any disasters (3 licenses included),.
- **Apple® Time Machine™ Backup:** Compatible backup target

Total Data Protection:

- **Native Security Support** with robust username and password authorized access. Create additional users and secure their content with password protection.
- **Encrypted Volume:** Allows you to create an encrypted volume with an assigned password; thus securing the data on the encrypted volume.
- **User Quotas:** Easily manage capacity by setting maximum limits per user.

Warranty: 3 year limited warranty

SPECIFICATIONS

- 2U form factor, supports up to twelve (12) 3.5 inch SATA Hard Disk Drives (trays included)
- Intel Xeon Quad Core 2.5GHz E3-1265Lv2 processor 8GB DDR3 Memory
- 4-drive or 12-drive configurations include SATA-II Server Class 7200rpm hard disk drives
- Four (4) 10/100/1000 Mbps Ethernet ports (RJ 45 connector)
- Three USB 2.0 ports; One front, two rear
- Support for 1x 10GbE through optional 10GbE PCI card (sold separately)
- **RAID Support:** RAID 1, 10, 5, 6, hot spare; automatic RAID rebuild and hot swap. RAID 0 and JBOD mode also available.
  RAID/storage pool should be the same capacity, speed, and manufacturer. Mixing different types of drives may result in unpredictable behavior)
- **iSCSI:** Supports both file and block storage pools, 256 hosts maximum with the following parameters;
  - Block storage pools; 32 LUNS maximum per pool. 128 LUNs maximum per device.
  - File storage pools; 256 LUNs Maximum per pool. 256 LUNs maximum per device.
- LAN standards: IEEE 802.3, IEEE 802.3u
- AC Voltage 100-240 VAC, 50-60 Hz
- **Power Consumption**
  - Max: 190W
  - Min: 55W (drives spun down)
  - Peak: 260W for 10s

  NOTE: These values represent a fully loaded device with the highest capacity HDD. Values may vary with other configurations.
- Acoustic noise – 48.5 dBA maximum
- VGA port for local display of video management signal on screen
- Temperature, Humidity and Altitude

	Operating	Non-Operating
Ambient Temp	10º to 35º C	-40º to 60º C
Temp Gradient	12 º C per hour	n/a
Humidity (non-condensing)	8% to 85% R.H.	5% to 95% R.H.
Max Wet Bulb	26.6ºC	29.4 ºC
Altitude	to 7500 ft.	to 40,000 ft.

- User interface localized for English, French, Italian, German, Spanish, Brazilian Portuguese, Russian, Traditional Chinese, Simplified Chinese, Korean, Japanese, Arabic, Hebrew, Turkish, Swedish, Dutch, and Polish

CERTIFICATIONS

The px12-450r, Network Storage has received the following certifications:

- Windows® Server 2008 R2 and Windows Server 2012
- VMware vSphere ESX 5.1 iSCSI and NAS
- XenServer™ 5.5, 5.6 (w/ MPIO), iSCSI & NFS

CONTENTS

- LenovoEMC px12-450r Rackmount NAS Server
- Sliding rail kit for standard 19" rack
- Ethernet cable
- Power cables (support for worldwide distribution – cable for: USA, EU, UK, AUST, China, Switzerland)
- Printed Quick Start Guide
- Software Download (with): LenovoEMC™ Storage Manager software, User Help Documentation

SYSTEM REQUIREMENTS

- Available 10/100/1000 Mbps network Ethernet port (required).
- Internet Explorer 7, Firefox® 3.x, Chrome 9, Safari 4 or later browser.
- Personal Cloud and remote access specific requirements:
  - Internet connection
  - Universal Plug and Play (UPnP™) compatible router, or administrative rights to port forward.
  - Recommended minimum sustained connection speeds for a good Personal Cloud experience.
    - Download: 2.5 Mbit/s
    - Upload: 500Kbit/s
  - Personal Cloud is not compatible with Active Directory
  - Personal Cloud is not compatible with XP 64 bit

PC Users:

- Microsoft® Windows® XP / Vista / 7 / 8 (all versions - exclusive of XP 64 bit for Personal Cloud)

Mac® Users:

- Mac OS X 10.6 – 10.8

Linux® Users

- Redhat Enterprise 6, Ubuntu 11, OpenSUSE 11.4, Other compatible Linux versions

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WEIGHT AND DIMENSIONS

Unit Information	Single Package Information	Master Carton Information	Pallet Information
21.375 x 19.0 x 3.5 inches	32.5 x 23.625 x 9.0 inches	32.5 x 23.625 x 9.0 inches	48 x 40 x 68 inches
54.29 x 48.26 x 8.89 cm	82.55 x 60.01 x 22.86 cm	82.55 x 60.01 x 22.86 cm	120 x 100 x 172 cm
30.8 lbs / 13.97 kg with 0 HDDs	46.84 lbs / 21.25 kg with 0 HDDs	47.84 lbs / 21.7 kg with 0 HDDs	694.76 lbs / 315.8 kg with 0 HDDs
36.56 lbs / 16.58 kg with 4 HDDs	52.6 lbs / 23.86 kg with 4 HDDs	53.6 lbs / 24.31 kg with 4 HDDs	775.4 lbs / 352.34 kg with 4 HDDs
48.08 lbs / 21.81 kg with 12 HDDs	64.12 lbs / 29.08 kg with 12 HDDs	65.12 lbs / 29.54 kg with 12 HDDs	936.68 lbs / 425.56 kg with 12 HDDs
		1 unit per master carton	7 layers, 2 master cartons per layer
			14 units per pallet

All dimensions LxWxH and are approximations

ORDERING INFORMATION

SKU	Model	EAN
70BR9004WW	LENOVOEMC™ PX12-450R NETWORK STORAGE ARRAY SERVER CLASS, 0TB DISKLESS	0887770964967
70BR9001WW	LENOVOEMC™ PX12-450R NETWORK STORAGE ARRAY SERVER CLASS, 8TB (4HD X 2TB)	0887770964905
70BR9002WW	LENOVOEMC™ PX12-450R NETWORK STORAGE ARRAY SERVER CLASS, 12TB (4HD X 3TB)	0887770964929
70BR9003WW	LENOVOEMC™ PX12-450R NETWORK STORAGE ARRAY SERVER CLASS, 16TB (4HD X 4TB)	0887770964943
70BR9005WW	LENOVOEMC™ PX12-450R NETWORK STORAGE ARRAY SERVER CLASS, 24TB (12HD X 2TB)	0887770964981
70BR9006WW	LENOVOEMC™ PX12-450R NETWORK STORAGE ARRAY SERVER CLASS, 36TB (12HD X 3TB)	0887770965001
70BR9007WW	LENOVOEMC™ PX12-450R NETWORK STORAGE ARRAY SERVER CLASS, 48TB (12HD X 4TB)	0887770965025
Accessories		
4N40A33704	NAS DRIVE 1TB BARE FOR PX SERIES, SERVER CLASS (HITACHI HUA722010CLA330)	0887770965117
4N40A33708	NAS DRIVE 2TB BARE FOR PX SERIES, SERVER CLASS (HITACHI HUA723020ALA640)	0887770965155
4N40A33711	NAS DRIVE 3TB BARE FOR PX SERIES, SERVER CLASS (HITACHI HUA723030ALA640)	0887770965186
4N40A33713	NAS DRIVE 4TB BARE FOR PX SERIES, SERVER CLASS (HITACHI HUS724040ALE640)	0887770965209
4N40A33712	NAS DRIVE MULTI-PACK 4TB (4HD X 1TB) FOR PX SERIES, SERVER CLASS (HITACHI HUA722010CLA330)	0887770965193
4N40A33714	NAS DRIVE MULTI-PACK 8TB (4HD X 2TB) FOR PX SERIES, SERVER CLASS (HITACHI HUA723020ALA640)	0887770965216
4N40A33702	NAS DRIVE MULTI-PACK 12TB (4HD X 3TB) FOR PX SERIES, SERVER CLASS (HITACHI HUA723030ALA640)	0887770965094
4N40A33703	NAS DRIVE MULTI-PACK 16TB (4HD X 4TB) FOR PX SERIES, SERVER CLASS (HITACHI HUS724040ALE640)	0887770965100
4N80A34103	NAS SPARES KIT 1TB HDD WITH TRAY, FAN & POWER SUPPLY FOR PX12-400R/450R, SERVER CLASS (HITACHI HUA722010CLA330)	0887770965360
4N80A34104	NAS SPARES KIT 2TB HDD WITH TRAY, FAN & POWER SUPPLY FOR PX12-400R/450R, SERVER CLASS (HITACHI HUA723020ALA640)	0887770965377
4N80A34105	NAS SPARES KIT 3TB HDD WITH TRAY, FAN & POWER SUPPLY FOR PX12-400R/450R, SERVER CLASS (HITACHI HUA723030ALA640)	0887770965384
4N80A34106	NAS SPARES KIT 4TB HDD WITH TRAY, FAN & POWER SUPPLY FOR PX12-400R/450R, SERVER CLASS (HITACHI HUS724040ALE640)	0887770965391
4N60A33903	NAS POWER SUPPLY FOR PX12-400R/450R, HOT-SWAPPABLE	0887770965315
4N50A33803	NAS FAN FOR PX12-400R/450R, HOT-SWAPPABLE	0887770965292
4N40A33767	NAS HDD/SSD TRAY FOR PX12-400R/PX12-450R	0887770965391
4N90A34202	NAS ETHERNET CARD 10G 2 PORT FOR PX12-400R/450R SERIES	0887770965261
Service Plans **		
5WS0A37779	EXTENDED SERVICE PLAN PX12-4XXR - 5 YEARS, 24X7 PHONE SUPPORT	0887942292836
5WS0A37769	ENHANCED SERVICE PLAN PX12 - 3 YEARS, 24/7 PHONE SUPPORT,NBD ON-SITE	0887942292935
5WS0A37771	ENHANCED SERVICE PLAN PX12 - 5 YEARS, 24/7 PHONE SUPPORT, NBD ON-SITE	0887942292911
5WS0A37775	PREMIUM SERVICE PLAN PX12-400R/450R - 3 YEARS, 24/7 PHONE SUPPORT, 4-HOUR ON-SITE WITH SERVER CLASS SPARES KIT (ALL CAPACITIES)	0887942292874
5WS0A37777	PREMIUM SERVICE PLAN PX12-400R/450R - 5 YEARS, 24/7 PHONE SUPPORT, 4-HOUR ON-SITE WITH SERVER CLASS SPARES KIT (ALL CAPACITIES)	0887942292850
Video Surveillance		
4N70A34002	MINDTREE® SECUREMIND CAMERA LICENCES FOR 2 CAMERAS IX/PX SERIES	0887942375195
4N70A34003	MINDTREE® SECUREMIND CAMERA LICENCES FOR 4 CAMERAS IX/PX SERIES	0887942375201
4N70A34004	MINDTREE® SECUREMIND CAMERA LICENCES FOR 8 CAMERAS IX4/PX SERIES	0887942375218
4N70A34006	MINDTREE® SECUREMIND CAMERA LICENCES FOR 16 CAMERAS PX SERIES ONLY	0887942375232
4N70A34007	MINDTREE® SECUREMIND CAMERA LICENCES FOR 32 CAMERAS PX RACKMOUNT ONLY	0887942375249
4N70A34005	MINDTREE® SECUREMIND CAMERA LICENCES FOR 48 CAMERAS PX12 RACKMOUNT ONLY	0887942375225

**** Available in most geographies, some restrictions apply**

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ADDITIONAL IMAGES